

## IN THE CLAIMS

Claims 1-9 (Canceled).

10 (Previously Presented). A packaged integrated system comprising:  
an integrated circuit;  
an integrated electroosmotic pump mounted on said integrated circuit;  
a catalytic re-combiner; and  
a package including said circuit, said pump, and said re-combiner.

11 (Previously Presented). The system of claim 10, wherein said integrated circuit is part of a first die and said integrated electroosmotic pump is part of a second die, said second die having a first side and a second side, said pump formed on said first side.

12 (Previously Presented). The system of claim 11, including microchannels to circuit cooling fluid on said second side and said second side mounted on said first die.

13 (Previously Presented). The system of claim 11, including stacking said second die on said first die.

14 (Withdrawn). The system of claim 13, including a third die, said third die including a re-combiner, said third die stacked on said first and second dice.

15 (Withdrawn). The system of claim 14, including a heat exchanger stacked on said re-combiner.

16 (Withdrawn). The system of claim 14, wherein said first die is coupled to said second die using copper-to-copper bonding.

17 (Withdrawn). The system of claim 10, wherein said package is a flip-chip package.

18 (Previously Presented). The system of claim 10, wherein said package is a bumpless build-up layer package.

19 (Previously Presented). A packaged integrated circuit comprising:  
an integrated circuit;  
an integrated electroosmotic pump;  
a catalytic re-combiner; and  
a bumpless build-up layer package including said circuit, said pump, and said re-combiner, said package including a build-up layer that mechanically couples said circuit, said pump, and said re-combiner.

20 (Previously Presented). The system of claim 19, wherein said integrated electroosmotic pump is formed on a first die, said integrated circuit is formed on a second die and said re-combiner is formed on a third die.

21 (Previously Presented). The system of claim 20, wherein said integrated circuit die is mounted under said integrated electroosmotic pump die.

22 (Previously Presented). The system of claim 21, wherein said first and second dice are coupled by copper-to-copper bonding.

23 (Previously Presented). The system of claim 19, including a heat spreader coupled to said build-up layer.

24 (Previously Presented). The system of claim 20, wherein said first die includes at least one electroosmotic pump on one side and a plurality of microchannels on the other side, said microchannels to circulate cooling fluid pumped by said electroosmotic pump.

25 (Previously Presented). The system of claim 24, wherein said first die is mounted on said second die with said microchannels facing said second die.